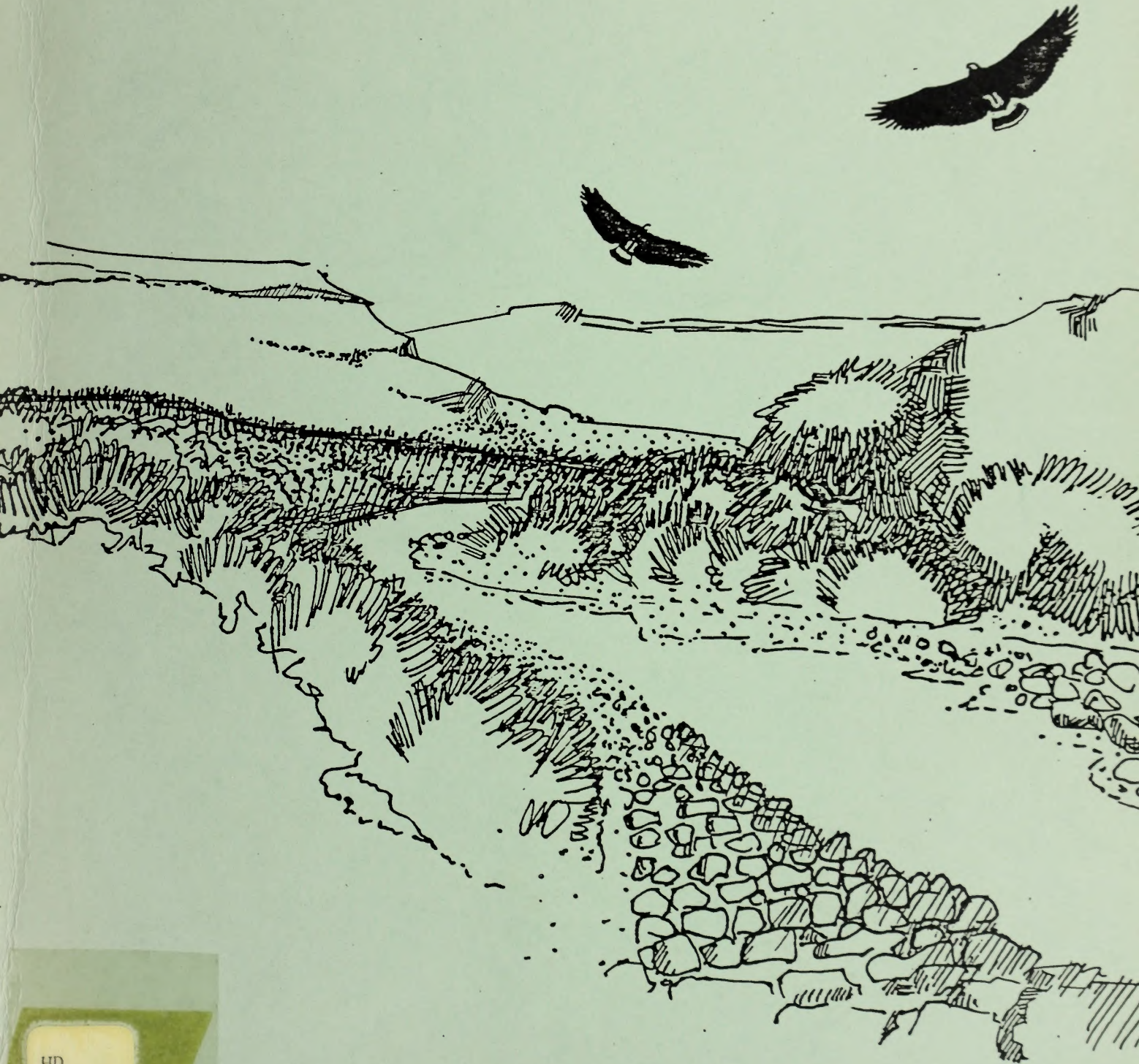


BURRO CREEK

RIPARIAN MANAGEMENT PLAN



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Prepared by
U.S. Department of the Interior
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Arizona

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RIPARIAN MANAGEMENT PLAN

May 1983

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KINGMAN RESOURCE AREA
PHOENIX DISTRICT OFFICE
BUREAU OF LAND MANAGEMENT

BURRO CREEK RIPARIAN MANAGEMENT PLAN

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I. Introduction.

Burro Creek supports a diverse assemblage of aquatic and terrestrial fauna that are highly dependent on the riparian biotic community. Therefore, it is proposed that BLM apply special management to public lands in the Burro Creek drainage and name the area the Burro Creek Riparian Management Area (BCRMA). The BCRMA encompasses 37,146 acres of public lands in west-central Arizona and is managed by the Kingman Resource Area (Phoenix District) of the Bureau of Land Management (BLM). This plan conforms with BLM's policy of preserving and enhancing the natural and beneficial values of riparian areas as outlined in the Presidential Executive Order 11990. Specifically, the management plan is designed to permit compatible land uses, while maintaining existing wildlife, fisheries, riparian, and instream resources; improve or rehabilitate areas that have been subject to habitat alteration or degradation; and monitor condition, trend, and quality of the habitats associated with Burro Creek and its environs.

II. Background.

This plan is one product of BLM's Hualapai-Aquarius Land Use Plan. The following describes the planning process and steps taken by BLM managers to date.

Resource Inventories. Between 1978 and 1980, BLM conducted resource inventories in the Hualapai-Aquarius Planning Area using many information sources.

Unit Resource Analysis (URA). In 1979, BLM developed analyses of the resources in the planning area using inventory information and other sources. From these analyses, BLM conducted workshops with selected members of the public to recognize opportunities for management of each resource.

Socioeconomic Analysis. Between 1979 and 1980, BLM specialists compiled an analysis of social, economic, environmental, and institutional values of the area.

Management Framework Plan (MFP). Between 1980 and 1982, through a series of public meetings and open houses, BLM managers developed multiple-use recommendations for management of the planning area. Of several recommendations concerning Burro Creek, one was that the area be designated an Area of Critical Environmental Concern.

Grazing Environmental Impact Statement (EIS). Concurrent with the MFP, BLM took the rangeland management recommendations, analyzed them for environmental impacts, and compared them with other alternatives. With public comment on the EIS, BLM completed its land use plan and detailed the actions for rangeland management in the Hualapai-Aquarius Rangeland Program Summary (BLM 1982a).

One of the most noted and controversial issues in the planning process concerned the fate of the important resource values along Burro Creek. It was recognized that without special management attention, many competing uses could impair the environment of Burro Creek. BLM determined that practical solutions to resource conflicts and programs to enhance the riparian and aquatic resources on Burro Creek could be accomplished through special management practices detailed in this plan. This document is an outgrowth of the Hualapai-Aquarius Land Use Plan. It details BLM's commitments to manage public lands in the Burro Creek area to maintain and enhance the natural renewable resources there.

III. Description of Burro Creek Riparian Management Area.

A. Existing Resource Values.

The Burro Creek drainage contains a variety of resource values. These include the following:

1. Minerals. Burro Creek is located within the Eureka Mining District. The area historically supported a number of prospects which were consolidated into an open-pit operation during the mid-1940s. Tungsten, silver, molybdenum, copper, and bentonite have been commercially extracted within the Eureka Mining District. The Cyprus Bagdad Copper Company (CBCC) is the only major commercial operation located near the BCRMA. The CBCC is headquartered at the townsite of Bagdad and employs 895 people. Copper and molybdenum are extracted primarily from sulfide ores and recovered via conventional milling and flotation processes. Low grade oxide ores are processed by acid solutioning in Copper Creek basin and recovered as cathode copper by electrowinning.

Selected parcels within the BCRMA have been leased for oil and gas exploration. Others have been leased for geothermal development. Two environmental assessments have been completed which address geothermal exploration and development within the BCRMA (BLM 1980b, 1982d).

Approximately 600 mining claims are registered in the BCRMA. These claims are concentrated along Boulder Creek (288) and the area west of Six-mile Crossing (295).

2. Livestock Grazing. Portions of eight grazing allotments are located within the BCRMA, i.e. Francis Creek, Burro Creek, Bagdad, Black Mesa, Greenwood Peak, Burro Creek Ranch, Greenwood, and Yolo. A grazing environmental impact statement (BLM 1981) and rangeland program summary (BLM 1982a, 1983) include additional information on livestock grazing programs within the BCRMA.

3. Burros. Wild burros are protected under the 1971 Wild Horse and Burro Act. Wild burros occur within much of the BCRMA and are particularly concentrated below the confluence of Burro and Boulder creeks. In recent years, burros have expanded their range in the Burro Creek drainage; their numbers are presently estimated at 325 animals within the BCRMA. Information regarding wild burro numbers and management within the BCRMA can be found in the Big Sandy Herd Management Area Plan (BLM 1982c).
4. Recreation. Hiking, camping, hunting, backpacking, and birdwatching activities occur throughout the BCRMA. These activities occur primarily during spring and fall. Off-road vehicle use is relatively minimal within the BCRMA, although some activity occurs adjacent to the creek. Rockhounding is a popular activity throughout the year, especially near Six-mile Crossing and the Burro Creek campground near U.S. Highway 93. The BLM campground is heavily used at all times of the year except summer. Portions of two wilderness study areas (Upper and Lower Burro Creek) occur within the BCRMA. Both areas have been evaluated for wilderness designation in the Draft Upper Sonoran Wilderness EIS (BLM 1982e).
5. Wildlife. The BCRMA is utilized by a variety of unique wildlife species. Much of the area is used for big game (mule deer, antelope, javelina, and mountain lion) and small game (rabbit, quail, dove, and waterfowl) hunting. Other uses include nonconsumptive activities such as birdwatching, photography, and educational or research opportunities for colleges, high schools, and conservation organizations. The BCRMA was inventoried for its biological resources in 1977 (Hanna et al. 1977) and 1978-79 (Butterwick et al. 1979, Kepner 1979 and 1980, Peck 1979, Hall 1980, Millsap 1980, 1981, and 1982, Millsap and Harrison 1981, Jones 1981). Approximately 2,300 acres of riparian habitat and 23 miles of stream occur on public lands within the BCRMA. These areas provide especially valuable wildlife habitat. The BCRMA includes three proposed Research Natural Areas identified in 1973 for their biotic diversity by the Arizona Academy of Science (Smith and Bender 1973a,b,c).
6. Cultural. Burro Creek drainage is regarded as one of the most archaeologically sensitive zones in the Kingman Resource Area. From A.D. 700 to 1860, the period for which there is evidence, the BCRMA was inhabited by elements of the prehistoric Cerbat and Prescott "branch" cultures and the historic Hualapai Indian Tribe. Archaeological sites occur in unusually high densities and reflect a wide range of prehistoric activities. Known types include rock rings, rock alignments, agricultural sites, quarries, extensive lithic procurement areas, lithic and ceramic scatters,

habitations, campsites, hilltop "fort" structures, roasting pits, rock shelters, rock art, mixed artifact scatters, and features related to Anglo-American mining and ranching activities. The combined archaeological resource base offers exceptional potential for the study of culture-history in the Southwest.

B. Special Features.

The BCRMA is characterized by highly variable topography, geology, vegetation, and water availability. The variety in habitat supports an equally diverse assemblage of flora and fauna. Biological inventories indicate over 250 plant and 300 vertebrate taxa are intimately associated with the Burro Creek ecosystem. At least three riparian biotic communities are represented within the BCRMA, i.e., mixed broadleaf riparian, cottonwood-willow riparian, and mesquite bosque. Much of the riparian habitat remains relatively undisturbed. Other areas have been adversely impacted by livestock and burro overutilization and flash flooding. Riparian biotic communities in Burro Creek provide many of the essential life history requirements to wildlife and fishes that occur there.

C. Significant Species.

The BCRMA provides habitat for a wide variety of unique plant and wildlife species. These include two federally listed endangered species, bald eagle (Haliaeetus leucocephalus) and peregrine falcon (Falco peregrinus), and eight state listed species: black hawk (Buteogallus anthracinus), osprey (Pandion haliaetus), great egret (Casmerodius albus), snowy egret (Egretta thula), black-crowned night heron (Nycticorax nycticorax), Gilbert's skink (Eumeces gilberti), desert tortoise (Gopherus agassizii), and roundtail chub (Gila robusta robusta). The BCRMA also includes seven BLM sensitive species, Gila monster (Heloderma suspectum), desert rosy boa (Lichanura trivirgata), Desert night lizard (Xantusia vigilis), golden eagle (Aquila chrysaetos), Cooper's hawk (Accipiter cooperii), sharp-shinned hawk (Accipiter striatus) and zone-tailed hawk (Buteo albonotatus). The Burro Creek drainage supports the largest breeding assemblage of black hawks in North America (18+ nesting pairs) and provides important habitat for wintering bald eagles (Millsap 1981). Perennial waters in Burro Creek provide important habitat for five native fishes: roundtail chub, speckled dace (Rhinichthys osculus), longfin dace (Agosia chrysogaster), desert sucker (Pantosteus clarki), and Sonora sucker (Catostomus insignis). In addition, Burro Creek cliffrose (Cowania subintegra) and Bigelow wild onion (Allium bigelovii), are found in the BCRMA. Burro Creek cliffrose is a U.S. Fish and Wildlife Service (USFWS) candidate for endangered species status with 160 acres of critical habitat

proposed, and Bigelow wild onion is listed as a BLM sensitive species. Their known distributions are limited and their perpetuation may be threatened by livestock, burro, or wildlife grazing and surface disturbance, e.g. mining.

D. Habitat Conditions.

Terrestrial and aquatic wildlife habitats within riparian communities of Burro Creek are being adversely impacted by a variety of competing activities and natural events. These include mining, livestock grazing, wild burro use, recreation, and flooding. BLM range inventories indicate that over 90 percent of the Burro Creek riparian corridor is in poor or fair rangeland condition, with over half the acreage in apparent downward trend (BLM 1981, Table 3-1).

Livestock grazing has resulted in a net reduction of perennial grasses and forbs, soil compaction and reduced infiltration, and a general lack of riparian regeneration. Immediate impacts to wildlife include loss of cover and forage. Projected impacts, under the existing situation, have been outlined in the Hualapai-Aquarius Grazing EIS and include a general decline in abundance of federal and state listed avian species. Black hawks would be eliminated from Burro Creek within 20 years, and bald eagles could discontinue using the drainage as a wintering area. Unless special management is applied, riparian communities in Burro Creek will continue to incur losses due to natural senescence, periodic flooding, human disturbance, and suppressed recruitment of riparian vegetation. Ultimately, without management, changes in the riparian community will result in the reduction of wildlife habitat and unique botanical resources and the elimination of certain species of special significance.

E. Manageability.

BLM has regulatory authority and sufficient acreage to adequately manage and protect the BCRMA for its biological resource values. Significant amounts of both surface (66 percent) and subsurface (76 percent) acreage in the BCRMA are managed by BLM. Consumptive uses for mining, recreation, and livestock and burro grazing are controlled through various multiple-use management activity plans and regulations.

BLM can control access and surface disturbance on public lands within the proposed special management area through activity plans and the application of existing regulations, executive orders, and laws. BLM has no management authority or jurisdiction over nonfederal lands within the BCRMA other than regulation of limited subsurface mineral rights under state or private surface.

IV. Issues and Objectives.

The following are issues which could adversely impact sensitive resource values within the BCRMA. Stated objectives are those sought by public land managers in order to maintain and/or enhance resource values within the management area.

A. Forest Products.

Presently, woodcutting, Christmas tree cutting, or other plant harvest is not authorized on public lands within the BCRMA. Potentially, these activities could adversely impact several resources within the area. The objectives for management of forest products within the BCRMA will be to maintain the riparian ecosystem and prevent habitat degradation.

B. Wildlife Habitat.

Threatened, endangered, and sensitive species dictate special management attention be given to the BCRMA. These resources are especially sensitive to surface disturbances such as mining, ORV traffic, grazing, and road and powerline construction. The objective will be to maintain and enhance plant and wildlife habitats with an emphasis on total ecosystem concepts.

C. Fire Management.

Fire suppression activities can have beneficial or adverse impacts on sensitive resource values found in the BCRMA. Objectives for fire management in the BCRMA will be to protect riparian resources and prevent unnecessary damage due to fire suppression actions.

D. Recreation.

Recreational activities may seasonally have negative impacts on certain resources within the BCRMA. Soil compaction, noise, and vegetative destruction may result from ORV traffic. Management objectives for recreation activities will be to prevent disturbance to sensitive wildlife and botanical resources while providing for traditional recreational uses such as camping, hiking, and rockhounding.

E. Realty.

Construction of utility corridors, land sales, and land trades that affect important cultural, recreation, grazing, wildlife habitat, or other important values within the BCRMA could have adverse impacts on these resources. Objectives for public land management of realty actions in the BCRMA will be to minimize impacts of utility corridors, maintain habitat integrity, and retain or attempt to acquire key resource lands.

F. Minerals.

Mineral and energy development can result in adverse impacts to sensitive resources. Mining activities within or adjacent to the BCRMA have resulted in habitat loss. The objective for managing minerals within the BCRMA will be to minimize biologically detrimental impacts due to mineral and energy exploration and development.

G. Livestock Grazing.

Beginning in early spring and through late summer, livestock concentrate in the riparian corridor throughout the BCRMA. This results in overutilization of streamside vegetation that is critical to wildlife resources. On the eight allotments included in the BCRMA, grazing management plans will be initiated to meet management goals in the Hualapai-Aquarius Management Framework Plan and the BCRMA Plan. Intensive management will provide for adequate development and rehabilitation of the riparian corridor.

H. Wild Burros.

Burro populations within the BCRMA are expanding their ranges and compete with native wildlife for forage and water. Within the BCRMA, these animals occasionally congregate around springsites and other water sources fouling them and denuding vegetation. Management objectives for burros in the BCRMA will be to prevent overutilization of riparian communities by burros and to minimize competition with native wildlife species.

I. Watershed.

Mining activities within or adjacent to the BCRMA have previously resulted in reduced water quality and quantity. The objective for managing watershed values within the BCRMA will be to maintain suitable water quality and quantity necessary for aquatic and terrestrial resources.

V. Management Practices.

The following actions describe special management guidelines that will be applied to public lands within the BCRMA to meet management objectives. These actions are designed to protect, enhance, and rehabilitate its biological resources and to evaluate the condition, trend, and quality of those resources. These practices conform with the Hualapai-Aquarius Management Framework Plan recommendations for Burro Creek and were developed by an interdisciplinary team and subjected to extensive public review.

A. Forest Products.

1. Close the BCRMA to private or commercial harvest of vegetative products, e.g. woodcutting and yucca harvest.

B. Wildlife Habitat.

1. Rehabilitate riparian habitats degraded or eliminated by severe flooding and overutilization. Establish riparian communities by planting livestock/burro-resistant cottonwood (Populus fremontii) and Goodding willow (Salix gooddingii) poles on 0.5 acre plots. Poles will be at least 12 feet above the ground and sunk to the water table. Poles will be protected from beaver depredation by wrapping their bases with chicken wire or hardware cloth. Plots will be established at a rate of at least five per year. This will be continued indefinitely until natural regeneration of cottonwoods is sufficient to sustain adequate reestablishment of this vegetative community in Burro Creek. BLM biologists have previously developed propagation methods and successfully transplanted cottonwoods into eight 0.25-acre plots on Francis Creek.
2. Monitor and compare herbivore (burro, mule deer, and cattle) use on Cowania subintegra populations. Browse utilization and fecal analysis will be used to determine impacts of herbivores on Burro Creek populations of C. subintegra. Monitoring information will be analyzed with emphasis on delineating management recommendations.
3. Monitor vegetative characteristics in black hawk habitat in upper (Francis Creek and vicinity) and lower (Boulder/Burro Creek confluence) Burro Creek at least every other year. Four 30.5 m vegetative transects (positioned at right angles radiating outward) will be established at each sample site. Vertical distribution of low height vegetation will be measured at 10 equidistant points on each transect. Tree density will be determined by counting all trees (> 1.4 m in height) within 3 m of transect lines. Diameter at breast height (DBH) and maximum height of each tree will be determined. Other parameters considered will include percent slope, distance to surface water, distance from and type of nearest human disturbance, percent cover (spherical densiometer), and plant community type. Vegetative data will delineate habitat requirements for black hawks and determine the effectiveness of management treatments.
4. Monitor wintering bald eagle activity in Burro Creek. BLM biologists will participate in the National Wildlife Federation midwinter survey coordinated by the Arizona Game and Fish Department. Winter use on Burro Creek will be documented by annual aerial surveys in January. Bald eagles will be enumerated in those areas and roost sites identified. Additional information on wintering populations may be obtained through cooperative programs with the Arizona Game and Fish Department and U.S. Fish and Wildlife Service,

e.g. color banding to determine origin of the wintering eagles and individual fidelity to the Burro Creek area.

5. The Aquarius Habitat Management Plan (HMP) will be developed in fiscal year 1983 for wildlife habitat that includes the BCRMA. Sikes Act cooperative planning or projects with AGFD may be included in the Aquarius HMP or HMP updates.

C. Fire Management.

1. Minimize use of large mechanized fire fighting equipment, e.g. bulldozers and earthmovers, in riparian habitat. Prevent chemical fire retardant from entering aquatic habitats in BCRMA (Norris et al. 1978). Under provisions of the Kingman Resource Area Fire Management Plan, riparian areas in Burro Creek are considered high priority for full suppression (Fire Control Zone 2).

D. Recreation.

1. Erect three interpretive signs at major points of motorized access to BCRMA, i.e. Highway 93 Campground, Six-mile Crossing, and Francis Creek. Publish a map or brochure to inform the public regarding BCRMA designation, management of wildlife, fisheries, botanical, and cultural values of Burro Creek, and pertinent rules and regulations.
2. Prohibit organized ORV races within the BCRMA. Allow vehicle access only on existing roads and trails.

E. Realty.

1. Route new transmission and pipelines outside the BCRMA or restrict to existing utility corridors, i.e. Big Sandy-Bagdad and Big Sandy-Bridle Creek Utility Corridors (BLM 1980a, Step 3). Require reclamation and erosion control for utility-related surface disturbances. Minimize construction of maintenance roads.
2. Powerlines and towers are to be built to specifications compatible with raptor use as identified in Olendorff et al. 1981.
3. Attempt to acquire, through trade, certain private and state lands in Burro Creek to improve manageability (BLM 1980a, L-6.1, RM-2.1, WL-10.1). Retain all public lands within the BCRMA.

F. Minerals.

1. Mining plans of operation (43 CFR 3809) will be required for all mines, 5 acres or more, within the BCRMA. Performance

bonds will be required when deemed appropriate from all owner/operators to prevent unnecessary and undue degradation. Leaching operations (cyanide solutioning or acid in-situ and heap) will be reviewed for environmental assessment and safety by the State Mine Inspector prior to commencement or upon suspension of the operation (Intention of Operation, ARS Sec. 27-303).

2. Restrict construction of roads, buildings, and equipment shelters within a 1/2 mile of Burro Creek or within 1/4 mile of other water sources within the BCRMA utilized by wildlife. Surface disturbance and extended human activity will not be allowed within 1/4 mile of active raptor nests during the breeding season (March 1 to July 15). Restrict geothermal, oil, and gas development and recovery to directional drilling with no surface occupancy in riparian areas.
3. Removal of salable minerals, within the BCRMA, e.g. sand and gravel, will be allowed only after thorough environmental analysis.
4. In accordance with the Burro Creek and Aquarius Mountains Geothermal Environmental Assessments, surface occupancy for geothermal operations is prohibited within 1/2 mile of Burro Creek or within 1/4 mile of other water sources, e.g. seeps and springs, utilized by wildlife. Surface disturbance and extended human activity is not allowed within 1/4 mile of active raptor nests during breeding (March 1 to July 15) and vehicles are restricted to existing road crossings on Burro Creek. Existing restrictions that regulate geothermal activity within the Burro Creek drainage concur with proposed guidelines of the BCRMA plan.
5. Under the provisions of BLM Instruction Memorandum 77-74, special stipulations can be placed on oil and gas exploration and development. Oil and gas leases within the Burro Creek drainage will stipulate no surface occupancy within 1/4 mile of Burro Creek and its perennial tributaries and a restricted season-of-operation (July 16 to February 29) to avoid conflicts with breeding raptors.

G. Livestock Grazing.

1. Allotment Management Plans (AMPs) for all allotments except Yolo within the BCRMA will be written over a 5-year period beginning in fiscal year 1983. BLM will not be developing an AMP for the Yolo Ranch due to the lack of public land on the allotment. AMPs are designed to restore, maintain, or enhance public rangelands in the Hualapai and Aquarius Planning Units to satisfactory condition within a 20-year period. AMPs will prescribe grazing programs to control overutilization of the riparian corridor within the BCRMA.

The following grazing programs or practices are recommended to promote regeneration of riparian habitat:

- a. Develop a rotational grazing system to provide back-to-back seasons of spring and summer rest (March 1 to August 30) 2 years out of 4. Grazing during the growing season would not occur more often than twice in 4 years.
 - b. Defer grazing use in selected riparian pastures for 3-4 years until riparian tree seedlings are at least 15 feet tall. Grazing would then be allowed for 3-4 years and the cycle repeated to establish several age classes.
 - c. Improve livestock distribution and decrease utilization of riparian vegetation by development of stockwaters out of the riparian zone. These water developments should be located as far away as feasible, i.e. at least 2 miles.
 - d. Construct riparian exclosures to ensure tree seedling establishment and relocate them every 3-4 years. This may be initiated prior to AMP development.
 - e. Adjust season of use in riparian pastures to allow grazing from October 1 through March 30 when riparian vegetation is less susceptible to grazing pressure.
 - f. Build and maintain flood-resistant cross fences to facilitate proper livestock distribution.
2. Monitor important riparian habitats within the BCRMA. An evaluation of growth and regeneration of cottonwoods is currently being conducted by the Range Research Task Force (University of Arizona), BLM, and the State Land Department on the Burro Creek allotment. Results are expected to provide new information relative to livestock grazing in riparian zones.
 3. Restrict use of herbicides and insecticides within the BCRMA for vector, vegetation, and agricultural pest control. Some insecticide or herbicide use on adjacent grassland mesas may be necessary to suppress periodic grasshopper or noxious plant infestations.

H. Wild Burros

1. The Big Sandy Herd Management Area Plan assigns first priority for feral burro management to the Burro Creek area. Initially, 92 percent of an estimated 275 burros will be removed and offered for public adoption. All burros in

riparian areas along Burro Creek will be removed. Burro removal and maintenance will be coordinated with allottees and provided for within the context of AMPs.

2. Browse utilization studies and fecal analysis will be conducted within the BCRMA and particularly in riparian and Cowania subintegra habitats. These studies will help determine the effects of the burro population in the BCRMA.
3. Burro use will be monitored annually to determine if excess burro populations exist in the BCRMA or if burros have repopulated riparian areas. Additional burro removals will be conducted if deemed necessary to maintain ecosystem integrity of the BCRMA.

I. Watershed

1. Monitor water quantity (Marsh-McBirney Model 201 and USGS Gaging Station No. 4244.47) and quality (water temperature, specific conductance, pH, dissolved oxygen, hardness, total alkalinity, orthophosphate, nitrate-nitrogen, sulfate, and copper) annually at selected stations on Burro and Boulder creeks. The Ambient Water Quality Unit of the Arizona State Department of Health Services is currently under contract with BLM to monitor the Burro Creek drainage for several physicochemical water quality parameters. The role of heavy metals and sulfates relative to natural and commercially mined sources will be investigated. All existing data, including that of the current study, will be evaluated and summarized for BLM. BLM will maintain accurate records of water quality and stream discharge (USGS Gaging Station No. 4244.47) on Rex 2 database (Honeywell 66/80 computer, DSC). Any violation of state or federal water quality standards will be reported to the Arizona Department of Health Services, Arizona Game and Fish Department, and U.S. Environmental Protection Agency. In the event of contamination, BLM will cooperate with appropriate government agencies in collecting and analyzing water, sediment, or tissue samples. BLM will assist, where possible, in identifying problem sources and provide input to abatement plans. In the event of unauthorized appropriation (diversion, impoundment, groundwater pumping), BLM will cooperate with the Arizona Department of Water Resources to resolve conflicts.
2. Maintain instream flows to provide for needs of aquatic life, wildlife, and riparian vegetation. Mitigate impacts of diversions, impoundments, or further withdrawals of groundwater. Assimilate instream flow data and legal descriptions to file for water rights on Burro Creek with the Arizona Department of Water Resources.

3. Nominate Burro Creek to the Arizona Unique Waters Protection Program (Bureau of Water Quality Control, Arizona Department of Health Services) for special protection under Arizona antidegradation regulations (AWQCC 1981). Under unique waters designation, impairment of high quality waters of exceptional recreational or ecological significance is disallowed.

VI. BCRMA Implementation.

BCRMA special management practices can be divided into four categories: guidelines, planning, projects, and monitoring. All management recommendations can be initiated within 1 year after approval of the special management plan, although some planning and monitoring are scheduled to continue over a period of years. All schedules assigned to BCRMA implementation are subject to the availability of funds and manpower. Funding may come from a combination of BLM programs, including watershed, range, wild burros, wildlife, and recreation.

The following is a workmonth (wm) and materials cost estimate of project, planning, and monitoring related activities. Volunteer assistance will be solicited and used whenever feasible. Periodic revisions or additions will be made to the plan when new information is gathered or management needs arise.

PROJECTS

FY83	1. Rehabilitate riparian habitats via cottonwood propagation.	
	Cottonwood poles	No Cost
	Hardware cloth or one inch mesh	
	chicken wire (2 rolls @ \$50/each)/year	\$ 100*
	Labor 1.5 wm @ \$2,400/wm/year	3,600*
FY83	2. Burro removal.	
	Removal of 136 burros @ \$110/head, using helicopter/herding technique	14,960
FY83	3. Range projects.	
	Burro Creek allotment	6,000
FY84	4. Install interpretive signs with informative brochures.	
	Signs (7 x 9 feet)	No Cost
	Brochures	
	Artist and layout	200
	Printing (4,000 count)	300
	Labor 0.5 wm @ \$2,400/wm/year	1,200
FY84	5. Burro removal.	
	Removal of 136 burros @ \$110/head, using helicopter/herding technique	14,960

PROJECTS (Continued)

FY84	6.	Range projects.	
		Burro Creek allotment	\$ 6,300
		Black Mesa allotment	3,600
FY84	7.	Construction and installation of 2 portable exclosures.	
		Materials \$1,000 each	2,000
		Labor 0.5 wm @ \$2,400/wm/year x 2	2,400
FY85	8.	Burro removal.	
		Removal of 23 burros @ \$110/head, using helicopter/herding technique	2,530
FY85	9.	Range projects.	
		Bagdad allotment	61,000
		Black Mesa allotment	17,775
FY86	10.	Range projects.	
		Greenwood Community allotment	16,000
		Burro Creek Ranch	40,000
FY87	11.	Range projects.	
		Greenwood Peak Community allotment	94,715
FY88	12.	Range projects.	
		Francis Creek allotment	141,000

PLANNING

FY83	1.	File for water rights on Burro Creek using instream flow data.	
		Labor 1.0 wm @ \$2,400/wm/year	\$ 2,400
FY83	2.	AMP development.	
		Burro Creek AMP	
		2 wms @ \$2,500/wm/year	5,000
FY84	3.	AMP development.	
		Bagdad and Black Mesa AMPs	
		5 wms @ \$2,500/wm/year	12,500
FY85	4.	AMP development.	
		Greenwood Community and Burro Creek Ranch AMPs---4 wms @ \$2,500/wm/year	10,000
FY86	5.	AMP development.	
		Greenwood Peak Community AMP	
		3 wms @ \$2,500/wm/year	7,500
FY87	6.	AMP development.	
		Francis Creek AMP	
		3 wms @ \$2,500/wm/year	7,500

MONITORING

FY83	1. Vegetation and water quality and quantity monitoring to be conducted via field training exercises of the BLM Phoenix Training Center (Professional Resources Management-Wildlife Training Course 6000-1). Monitoring will occur annually, i.e. spring (April/May) or fall (September/October). Labor (instruction and supervision) 1.0 wm @ \$2,400/wm/year	\$2,400*
FY83	2. Monitor midwinter (January) bald eagle activity. Helicopter (6 hours @ \$305/hour) Labor 0.5 wm @ \$2,400/wm/year	1,830* 1,200*
FY83	3. Monitor burro populations in BCRMA Labor 1.0 wm @ \$2,400/wm/year	2,400*
FY83	4. Monitor cottonwood plantings. Labor 0.5 wm @ \$2,400/wm/year	1,200*
FY83	5. AMP monitoring.	5,500*
FY84	6. Monitor burro, mule deer, and cattle use on <u>Cowania subintegra</u> populations and riparian habitat. Fecal analysis (College of Agriculture, University of Arizona, Tucson) <u>C. subintegra</u> (24 samples @ \$25/each) Riparian (16 samples) Labor (sample collection) 1.0 wm @ \$2,400/wm/year	600 400 2,400
FY84	7. Nomination of Burro Creek for special protection under Arizona antidegradation regulations. Labor 0.5 wm @ \$2,400/wm/year	1,200

* Annual cost each year BCRMA plan is in effect.

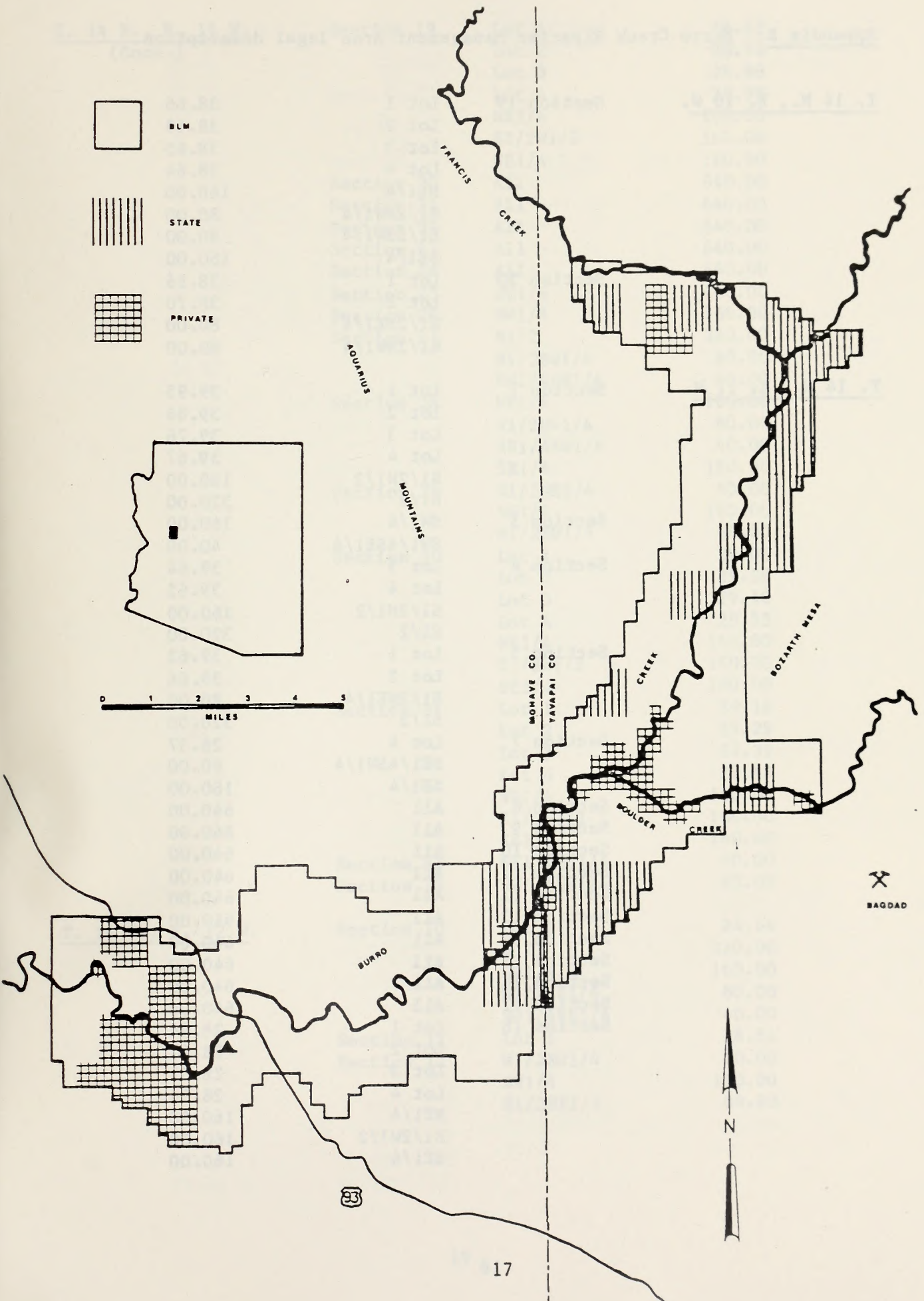
IMPLEMENTATION SUMMARY

Fiscal Year	Projects	Planning	Monitoring	Fiscal Year Total
1983	\$ 24,660	\$ 7,400	\$14,530	\$ 46,590
1984	34,660	12,500	19,130	66,290
1985	85,005	10,000	14,530	109,535
1986	59,700	7,500	14,530	81,730
1987	98,415	7,500	14,530	120,445
1988	144,700	—	14,530	159,230
TOTALS	\$447,140	\$44,900	\$91,780	\$583,820

VII. Summary.

It is proposed that public lands along Burro Creek be managed under the name Burro Creek Riparian Management Area.

The Burro Creek drainage contains a diverse assemblage of biological resources, including several threatened and endangered plants and animals. The area is best known for its raptor fauna, particularly black hawks and wintering bald eagles. Of all biological resources considered, riparian habitat is the most threatened element of the BCRMA. Only 6.2 percent (2,300 acres) of 37,146 acres proposed for special management include riparian habitat. Although riparian habitat represents a small percentage of the total BCRMA acreage, it provides essential life history requirements for the majority of wildlife that occur there. The importance of riparian habitat to the BCRMA has been identified and special management actions are provided for riparian protection and perpetuation. The proposed management actions include guidelines, planning, projects, and monitoring which provide for the rehabilitation of degraded habitats and evaluation of key biological populations and environmental quality.



Appendix B. Burro Creek Riparian Management Area legal description.

<u>T. 14 N., R. 10 W.</u>	Section 19	Lot 1	38.66
		Lot 2	38.65
		Lot 3	38.65
		Lot 4	38.64
		NE1/4	160.00
		E1/2NW1/4	80.00
		E1/2SW1/4	80.00
		SE1/4	160.00
	Section 30	Lot 1	38.66
		Lot 2	38.70
		W1/2NE1/4	80.00
		E1/2NW1/4	80.00
<u>T. 14 N., R. 11 W.</u>	Section 1	Lot 1	39.95
		Lot 2	39.86
		Lot 3	39.76
		Lot 4	39.67
		S1/2N1/2	160.00
		S1/2	320.00
	Section 3	SW1/4	160.00
		SW1/4SE1/4	40.00
	Section 4	Lot 3	39.64
		Lot 4	39.62
		S1/2N1/2	160.00
		S1/2	320.00
	Section 5	Lot 1	39.63
		Lot 2	39.66
		S1/2NE1/4	80.00
		S1/2	320.00
	Section 7	Lot 4	28.37
		SE1/4SW1/4	40.00
		SE1/4	160.00
	Section 8	All	640.00
	Section 9	All	640.00
	Section 10	All	640.00
	Section 11	All	640.00
	Section 12	All	640.00
	Section 13	All	640.00
	Section 14	All	640.00
	Section 15	All	640.00
	Section 16	All	640.00
	Section 17	All	640.00
	Section 18	Lot 1	28.44
		Lot 2	28.47
		Lot 3	28.51
		Lot 4	28.54
		NE1/4	160.00
		E1/2W1/2	160.00
		SE1/4	160.00

T. 14 N., R. 11 W.
(Cont.)

Section 19	Lot 1	28.62
	Lot 2	28.74
	Lot 3	28.86
	Lot 4	28.98
	NE1/4	160.00
	E1/2W1/2	160.00
	SE1/4	160.00
Section 20	All	640.00
Section 21	All	640.00
Section 22	All	640.00
Section 23	All	640.00
Section 24	All	640.00
Section 25	NE1/4	160.00
Section 26	NW1/4	160.00
Section 27	N1/2	320.00
	N1/2SW1/4	80.00
	SW1/4SW1/4	40.00
Section 28	NE1/4	160.00
	N1/2NW1/4	80.00
	SE1/4NW1/4	40.00
	SE1/4	160.00
Section 29	N1/2NE1/4	80.00
	NW1/4	160.00
	W1/2SW1/4	80.00
Section 30	Lot 1	29.05
	Lot 2	29.08
	Lot 3	29.10
	Lot 4	29.13
	NE1/4	160.00
	E1/2W1/2	160.00
	SE1/4	160.00
Section 31	Lot 1	29.18
	Lot 2	29.29
	Lot 3	29.39
	Lot 4	29.49
	NE1/4	160.00
	E1/2W1/2	160.00
	SE1/4	160.00
Section 33	NE1/4NE1/4	40.00
Section 34	NW1/4NW1/4	40.00

T. 14 N., R. 12 W.

Section 10	Lot 1	24.64
	N1/2	320.00
	SW1/4	160.00
	N1/2SE1/4	80.00
	SW1/4SE1/4	40.00
Section 11	Lot 1	38.51
Section 12	W1/2NW1/4	80.00
	SW1/4	160.00
	S1/2SE1/4	80.00

T. 14 N., R. 12 W.
(Cont.)

Section 14	Lot 1	31.30
	Lot 2	0.05
	Lot 3	37.54
	NE1/4	160.00
	E1/2NW1/4	80.00
	S1/2	320.00
Section 15	Lot 1	21.79
	Lot 2	37.48
	W1/2NE1/4	80.00
	NW1/4	160.00
	S1/2	320.00
Section 22	All	640.00
Section 27	E1/2NW1/4	80.00

T. 15 N., R. 9 W.

Section 19	Lot 3	38.07
	Lot 4	38.18
	E1/2SW1/4	80.00
	SE1/4	160.00
Section 30	Lot 1	38.27
	Lot 4	38.49
	Lot 5	36.63
	Lot 6	36.89
	Lot 7	25.91
	Lot 8	8.86
	Lot 9	15.87
	Lot 10	36.83
	Lot 11	33.04
	Lot 12	7.70
	Lot 13	19.08
	NE1/4	160.00
	NE1/4NW1/4	40.00

T. 15 N., R. 10 W.

Section 1	Lot 1	40.00
	Lot 2	40.00
	Lot 3	40.00
	Lot 4	40.00
	S1/2N1/2	160.00
	SW1/4	160.00
Section 3	Lot 1	40.74
	Lot 2	40.70
	S1/2NE1/4	80.00
	E1/2SW1/4	80.00
	SE1/4	160.00
Section 9	SE1/4SE1/4	40.00
Section 10	All	640.00
Section 11	All	640.00
Section 12	W1/2	320.00
Section 13	W1/2	320.00
Section 14	All	640.00
Section 15	N1/2	320.00
	SW1/4	160.00
	N1/2SE1/4	80.00
	SE1/4SE1/4	40.00

T. 15 N., R. 10 W.
(Cont.)

Section 20	E1/2NE1/4	80.00
	S1/2SW1/4	80.00
	SE1/4	160.00
Section 21	N1/2	320.00
	SW1/4	80.00
	SW1/4SW1/4	40.00
Section 22	SE1/4NE1/4	40.00
	N1/2NW1/4	80.00
	SW1/4NW1/4	40.00
	NW1/4SW1/4	40.00
	NE1/4SE1/4	40.00
	S1/2SE1/4	80.00
Section 23	All	640.00
Section 24	W1/2	320.00
	SE1/4	160.00
Section 26	N1/2	320.00
	N1/2SW1/4	80.00
	SE1/4	160.00
Section 27	NE1/4	160.00
	SW1/4SW1/4	40.00
Section 28	W1/2NW1/4	80.00
	NE1/4SW1/4	40.00
	S1/2SW1/4	80.00
	SE1/4	160.00
Section 29	N1/2NE1/4	80.00
	SW1/4NE1/4	40.00
	NW1/4	160.00
	N1/2SW1/4	80.00
	SW1/4SW1/4	40.00
	NW1/4SE1/4	40.00
	SE1/4SE1/4	40.00
Section 30	NE1/4NE1/4	40.00
	S1/2NE1/4	80.00
	E1/2SW1/4	80.00
	SE1/4	160.00
Section 31	E1/2	320.00
	SE1/4SW1/4	40.00
Section 33	All	640.00
Section 34	W1/2NE1/4	80.00
	SE1/4NE1/4	40.00
	W1/2	320.00
	N1/2SE1/4	80.00
Section 35	NE1/4	160.00
	NE1/4NW1/4	40.00
	S1/2NW1/4	80.00

T. 16 N., R. 10 W.

Section 1	Lot 1	38.13
	Lot 2	38.04
	Lot 3	37.94
	Lot 4	33.15
	S1/2N1/2	160.00
	S1/2	320.00

T. 16 N., R. 10 W.
(Cont.)

Section 3	Lot 3	37.98
	Lot 4	37.98
	S1/2NW1/4	80.00
	SW1/4	160.00
Section 10	N1/2NW1/4	80.00
	N1/2SE1/4	80.00
Section 11	NE1/4	160.00
	S1/2	320.00
Section 12	All	640.00
Section 13	All	640.00
Section 14	N1/2N1/2	160.00
	SE1/4NE1/4	40.00
	SE1/4	160.00
Section 23	E1/2	320.00
	SE1/4NW1/4	40.00
	E1/2SW1/4	80.00
Section 24	All	640.00
Section 25	All (excluding MS 1683B)	635.005
Section 26	E1/2	320.00
	E1/2W1/2	160.00
Section 34	E1/2SE1/4	80.00
Section 35	All	640.00

T. 16-1/2 N., R. 10 W.

Section 33	S1/2	320.00
Section 34	S1/2SW1/4	80.00
	S1/2SE1/4	80.00
Section 35	S1/2SW1/4	80.00
	S1/2SE1/4	<u>80.00</u>

TOTAL FEDERAL ACRES 37,145.785

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